

IN THE CLAIMS:

Claims 1-76 (cancelled).

Claim 77 (new): An electrotransport comprising:

a first electrode comprising an electropositive material in operable communication with said ionic fluid;

a second electrode comprising an electronegative material in operable communication with said ionic fluid;

a semipermeable membrane disposed adjacently under at least a portion of either said first electrode or said second electrode, said semipermeable membrane configured to be in fluid communication with an ionic fluid in an environment in which said electrotransport device is placed;

a compartment adapted for containing a beneficial agent therein, the compartment in operable communication with said first or second electrode, said semipermeable membrane configured to be in fluid communication with any beneficial agent contained in said compartment; and

a conductor, insulated from the ionic fluid, said conductor extending from said first electrode to said second electrode and providing an electrical interconnection therebetween;

wherein said electropositive material, said electronegative material, said conductor and said ionic fluid complete a circuit capable of creating a current sufficient to transport said beneficial agent through said membrane without an additional power source.

Claim 78 (new): The electrotransport device of claim 77, wherein said semipermeable membrane is configured to allow flow of molecules from said compartment to the ionic fluid responsive to an electric current delivered thereupon.

Claim 79 (new): The electrotransport device of claim 77, wherein said semipermeable membrane is configured to substantially inhibit transport of the molecules therethrough in the absence of an electric current delivered to one of the molecules and said semipermeable membrane.

Claim 80 (new): The electrotransport device of claim 77, further comprising a second semipermeable membrane disposed adjacently under said second electrode.

Claim 81 (new): The electrotransport device of claim 77, wherein said semipermeable membrane is configured to conduct charged species from said first electrode when implanted under a subject's skin surface in whom the electrotransport device has been implanted.

Claim 82 (new): The electrotransport device of claim 77, wherein said at least one semipermeable membrane is configured to be substantially microporous throughout, and adapted to substantially prevent blood intrusion into said semipermeable membrane.

Claim 83 (new): The electrotransport device of claim 77, wherein said semipermeable membrane is configured to selectively allow the flow of ionized molecules therethrough.

Claim 84 (new): The electrotransport device of claim 77, wherein said first electrode is configured as one of a solid, a suspension, a gel, and a solution.

Claim 85 (new): The electrotransport device of claim 77, wherein said second electrode is configured as one of a solid, a suspension, a gel, and a solution.

Claim 86 (new): The electrotransport device of claim 77, wherein said first electrode and said beneficial agent are substantially interspersed throughout at least a portion of said compartment.

Claim 87 (new): The electrotransport device of claim 77, further comprising a power source in electrical communication with said first electrode.

Claim 88 (new): The electrotransport device of claim 87, further comprising a control circuit interposed in said electrical connection between said power source and said first electrode.

Claim 89 (new): The electrotransport device of claim 77, further comprising a second semipermeable membrane disposed adjacently under at least a portion of said second electrode, said second semipermeable membrane configured to be in fluid communication with a second beneficial agent contained in said second electrode, said second semipermeable membrane adapted to be implanted under at least a portion of a subject's stratum corneum in whom the electrotransport device has been implanted.

Claim 90 (new): The electrotransport device of claim 77, wherein said compartment has portions formed of a refractory transition metal configured as an electrode housing, said portions coated with a biocompatible material.

Claim 91 (new): The electrotransport device of claim 77, wherein said first and second electrode are configured as part of a unitary housing.

Claim 92 (new): The electrotransport device of claim 90, wherein said electrode housing is formed of the same refractory transition metal as the first electrode.

Claim 93 (new): The electrotransport device of claim 90, wherein said portions are formed of a metal selected from the group consisting of titanium and tantalum.

Claim 94 (new): The electrotransport device of claim 77, wherein at least a portion of said semipermeable membrane comprises a material configured to be resorbable by a subject's body tissues in whom the electrotransport device has been implanted.

Claim 95 (new): An electrotransport device for delivering molecules of a beneficial agent to tissue of a subject upon implantation, said electrotransport device comprising:

a plurality of spaced apart electrodes, each of said plurality of spaced apart electrodes adapted to be placed over a subject's tissue surface;

wherein at least one of said plurality of spaced apart electrodes comprises an electropositive or an electronegative material;

at least one conductor extending between two of said plurality of spaced apart electrodes;

at least one reservoir disposed under an electrically conducting area of a first electrode of said plurality of spaced apart electrodes, said at least one reservoir adapted to accommodate the molecules of beneficial agent; and

an ion exchange membrane configured to conduct a current disposed adjacently under said at least one reservoir, said ion exchange membrane adapted to be implanted under at least a portion of the tissue of a subject;

wherein a subject's tissue completes a circuit between said plurality of spaced apart electrodes upon implantation under the subject's skin surface and enables delivery of molecules of the beneficial agent to the subject.

Claim 96 (new): The electrotransport device of claim 95, wherein a pair of said electrodes are positioned a fixed distance from each other.

Claim 97 (new): The electrotransport device of claim 95, wherein said semipermeable membrane is configured to allow the flow of the molecules therethrough responsive to delivery of an electric current thereupon.

Claim 98 (new): The electrotransport device of claim 95, wherein said semipermeable membrane is configured to substantially inhibit transport of the molecules in the absence of an electric current delivered to one of the molecules and said semipermeable membrane.

Claim 99 (new): The electrotransport device of claim 95, wherein said semipermeable membrane is configured to substantially inhibit transport of the molecules in the absence of an electric

current.

Claim 100 (new): The electrotransport device of claim 95, wherein said semipermeable membrane is configured to selectively allow the flow of ionized molecules therethrough.

Claim 101 (new): The electrotransport device of claim 95, wherein at least part of said semipermeable membrane comprises a material configured to be resorbable by the subject's body tissues.

Claim 102 (new): The electrotransport device of claim 95, further comprising a second semipermeable membrane disposed in current conducting relationship under a second electrode of said plurality of mutually spaced apart electrodes, said second semipermeable membrane adapted to be implanted under at least a portion of the subject's stratum corneum.

Claim 103 (new): The electrotransport device of claim 95, further comprising a power source in electrical communication with said plurality of mutually spaced apart electrodes.

Claim 104 (new): A method of electrically facilitating the transport of a beneficial agent to a body tissue of a subject, said method comprising:

- providing a plurality of electrodes configured to conduct electrical current in relation to said body tissue, a first electrode comprising electropositive material and a second electrode comprising electronegative material, said first and second electrodes configured on a single housing;

- providing at least one beneficial agent reservoir disposed adjacently to an electrically conductive area of at least one of said plurality of electrodes;

- including a beneficial agent in said beneficial agent reservoir;

- providing at least one semipermeable membrane in fluid communication with said at least one beneficial agent reservoir, said at least one semipermeable membrane configured to substantially inhibit passive diffusion of a beneficial agent therethrough in the absence of an electrical current applied to said at least one semipermeable membrane and said beneficial agent;

implanting at least a portion of said at least one semipermeable membrane beneath a subject's stratum corneum skin layer, wherein, responsive to said implanting, a circuit is completed between said plurality of electrodes capable of transmitting a voltage from said plurality of electrodes and said at least one semipermeable membrane to said body tissues, said voltage effecting transport of said beneficial agent through said at least one semipermeable membrane, said voltage facilitating transport of said beneficial agent through said body tissues; and

delivering said beneficial agent to the subject's body tissues.

Claim 105 (new): The method according to claim 104, further comprising implanting the electrodes and the membrane in their entirety beneath the subject's stratum corneum skin layer.

Claim 106 (new): The method according to claim 104, wherein said providing at least one semipermeable membrane comprises providing at least one semipermeable membrane configured as one of a cationic exchange membrane and an ionic exchange membrane.

Claim 107 (new): The method according to claim 104, wherein delivering said beneficial agent to the subject comprises diffusing said beneficial agent through micropores of said at least one semipermeable membrane.

Claim 108 (new): The method according to claim 104, wherein said at least one semipermeable membrane is configured to have a molecular cutoff adapted to substantially prevent blood intrusion into said at least one semipermeable membrane.

Claim 109 (new): The method according to claim 104, wherein delivering said beneficial agent to said subject comprises electrostatically repelling said beneficial agent through said at least one semipermeable membrane.

Claim 110 (new): The method according to claim 104, further comprising implanting said

electrodes and said beneficial agent reservoir under a skin surface of said subject.

Claim 111 (new): The method according to claim 104, wherein said implanting at least a portion of said at least one semipermeable membrane beneath a stratum corneum skin layer comprises implanting a bottom-most surface of said at least one semipermeable membrane to a depth approximating about 20 – 100 μm below the stratum corneum skin layer.

Claim 112 (new): An intraocular delivery device for delivering a beneficial agent to a subject's eye using liquid present on the surface of the subject's conjunctiva to complete a circuit between two complementary electrodes configured within said intraocular drug delivery device, said intraocular drug delivery device comprising:

- a membrane comprising a polymer, semipermeable to water, and further comprising first and second surfaces, said first surface being adapted to be placed on the subject's conjunctiva to interact with any liquid present thereon, said second surface configured to contain a beneficial agent for delivery to the subject;

- a first electrode in fluid communication with said membrane and said beneficial agent, said first electrode comprising an electropositive or an electronegative material; and

- a second electrode comprising an electropositive or an electronegative material, said second electrode configured to be in fluid communication with the subject's conjunctiva, but, except for conductive material connecting said first and second electrodes, electrically isolated from said first electrode, said first and second electrodes being selected, when configured together as a circuit, to form a battery, said first and second electrodes configured on a unitary housing;

- wherein, when said intraocular drug delivery device is placed on the subject's conjunctiva, any electrically conductive liquid present thereon completes an ionic circuit between said first and second electrodes;

- wherein said electropositive or electronegative material of said first electrode is complementary to said second electronegative or electropositive material of said second electrode, respectively, such that when electrically connected with any electrically conductive liquid present on the subject's conjunctiva, said battery is formed that drives the beneficial agent

through said membrane for delivery to the subject's conjunctiva upon completing an electronic circuit.

Claim 113 (new): The intraocular delivery device of claim 112, wherein the electropositive or electronegative material of the first electrode is magnesium.

Claim 114 (new): The intraocular delivery device of claim 112, wherein the electropositive or electronegative material of the second electrode is carbon.